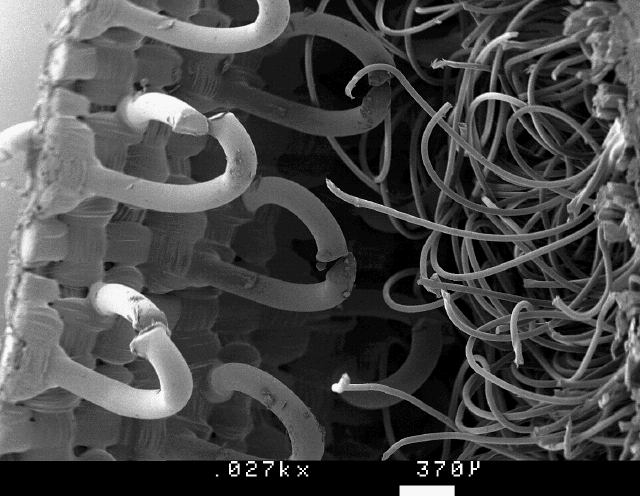
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**Biomimicry – The Evolution of Design**

**Introduction**

Biomimicry is the use of nature as the template for new design ideas. Effectively combining biology with engineering and design, biomimicry is the wave of the future! Unlike other forms of engineering, biomimicry draws from the natural world all around us for inspiration on how to solve design problems and generate ideas for new products. This concept is nothing new and in fact has been the driving force behind products you see ever day like Velcro in addition to cutting edge products like the drag-reducing suits worn by Olympic swimmers in the Beijing Olympic games.

You will be working in pairs for this assignment and will be given class time to work with your partner. Your task is to find biomimetic solutions to various design problems. First, choose a design problem from the list below. Then, research the natural world to find a chemical/structure/ whatever to solve the problem set forth. Start with the resources list given for some background research and then branch out from there. Once you have found a solution, design a product that will solve the problem at hand, write an explanation of the design and the organism that inspired it and create a detailed schematic representation of the product displaying its use. It’s OK if some of your designs would require a new invention to work, that’s what this project is all about!

Once your design is completed, you will present your new invention to the rest of the class as if they were the investors in this new product.

Your final finished product should contain:

* A two page written explanation of the solution you have designed and the organism it comes from.
* A drawn or sculpted schematic of your design.

**Design Problems**

1. A speedboat company wants a new coating for the bottom of their newest line of racing boats that will make their boats even faster.
2. An architecture firm is looking for a more efficient way of pumping water against gravity for a large fountain.
3. A pipe company wants to find a way of making their pipes resistant to mineral build-up.
4. An automobile company wants a new adhesive for their manufacturing process.
5. A camouflage company would like to make a material that can change color.
6. The United States Navy would like to make the hull of their submarines move through water more efficiently.
7. An airplane manufacturer wants a self-repairing skin for the internal hull of their aircrafts.
8. A lens making company would like a way of producing lenses with less distortion.
9. An armor company would like to make more effective body armor for police officers.
10. An adhesive company would like to make a biodegradable adhesive.

**Resources**

http://www.designboom.com/contemporary/biomimicry.html

http://www.biomimicrynews.com/

http://www.sandiegozoo.org/conservation/biomimicry

http://bioinspired.sinet.ca/

http://ndeaa.jpl.nasa.gov/nasa-nde/biomimetics/bm-hub.htm